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**Effect of axial B-field on shock structure within gas-filled liner z-pinch experiments performed on MAGPIE** GUY BURDIAK, SERGEY LEBEDEV, FRANCISCO SUZUKI-VIDAL, GEORGE SWADLING, SIMON BLAND, LEE SUTTLE, MATTHEW BENNET, JACK HARE, Imperial College London — Cylindrical liner z-pinches can be used to drive convergent shock waves through gas contained inside with a striking degree of azimuthal symmetry. Here we present data from gas-filled liner experiments that include an azimuthally anisotropic axial magnetic field. The 4-fold azimuthal symmetry of the magnetic field distribution imprints itself upon the shape of the convergent shocks. This occurs despite a ratio of shock ram pressure to magnetic pressure of order 100. Interferometry and emission imaging data that show the evolution of the shock structure as it converges are presented alongside potential explanations for the dynamics. These experiments provide a potential platform for studying magnetized plasma physics with relevance to magnetized fusion schemes. Experiments were performed on the 1.4 MA, 240 ns rise-time MAGPIE pulsed-power device at Imperial College London.

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